

Figure 1: Sequence listing of the OAS1 gene .

LOCUS NM_016816 **1590 bp** **mRNA** **linear** **PRI**
22-FEB-2001

DEFINITION Homo sapiens 2',5'-oligoadenylate synthetase 1 (40-46 kD)
(OAS1),
transcript variant E18, mRNA.

ACCESSION NM_016816
VERSION NM_016816.1 GI:8051620
KEYWORDS.
SOURCE human.
ORGANISM Homo sapiens
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata;
Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae;
Homo.
REFERENCE 1 (bases 1 to 1590)
AUTHORS Merlin,G., Chebath,J., Benech,P., Metz,R. and Revel,M.
TITLE Molecular cloning and sequence of partial cDNA for
interferon-induced (2'-5')oligo(A) synthetase mRNA from
human cells

JOURNAL Proc. Natl. Acad. Sci. U.S.A. 80 (16), 4904-4908 (1983)
MEDLINE 83273721
PUBMED 6348777

REFERENCE 2 (bases 1 to 1590)
AUTHORS Saunders,M.E., Gewert,D.R., Tugwell,M.E., McMahon,M. and
Williams,B.R.
TITLE Human 2-5A synthetase: characterization of a novel cDNA
and
corresponding gene structure

JOURNAL EMBO J. 4 (7), 1761-1768 (1985)
MEDLINE 85284966
PUBMED 2411547

REFERENCE 3 (bases 1 to 1590)
AUTHORS Benech,P., Mory,Y., Revel,M. and Chebath,J.
TITLE Structure of two forms of the interferon-induced (2'-5')
oligo A
synthetase of human cells based on cDNAs and gene

SEQUENCES
JOURNAL EMBO J. 4 (9), 2249-2256 (1985)
MEDLINE 86081732
PUBMED 2416561

REFERENCE 4 (bases 1 to 1590)
AUTHORS Wathelet,M., Moutschen,S., Cravador,A., DeWit,L.,
Defilippi,P.,
Huez,G. and Content,J.
TITLE Full-length sequence and expression of the 42 kDa 2-5A
synthetase

induced by human interferon
JOURNAL FEBS Lett. 196 (1), 113-120 (1986)
MEDLINE 86108911
PUBMED 3753689

REFERENCE 5 (bases 1 to 1590)
AUTHORS Shiojiri,S., Fukunaga,R., Ichii,Y. and Sokawa,Y.
TITLE Structure and expression of a cloned cDNA for human
(2'-5')oligoadenylate synthetase

JOURNAL J. Biochem. 99 (5), 1455-1464 (1986)
MEDLINE 86223945
PUBMED 3754863

Figure 1:Page 2

REFERENCE 6 (bases 1 to 1590)
 AUTHORS Williams, B.R., Saunders, M.E. and Willard, H.F.
 TITLE Interferon-regulated human 2'-5'A synthetase gene maps to
 chromosome 12
 JOURNAL Somat. Cell Mol. Genet. 12 (4), 403-408 (1986)
 MEDLINE 86289724
 PUBMED 2426799

REFERENCE 7 (bases 1 to 1590)
 AUTHORS Benech, P., Vigneron, M., Peretz, D., Revel, M. and
 Chebath, J.
 TITLE Interferon-responsive regulatory elements in the promoter
 of the
 human 2',5'-oligo(A) synthetase gene
 JOURNAL Mol. Cell. Biol. 7 (12), 4498-4504 (1987)
 MEDLINE 88142842
 PUBMED 2830497

REFERENCE 8 (bases 1 to 1590)
 AUTHORS Wathélet, M.G., Clauss, I.M., Nols, C.B., Content, J. and
 Huez, G.A.
 TITLE New inducers revealed by the promoter sequence analysis
 of two
 interferon-activated human genes
 JOURNAL Eur. J. Biochem. 169 (2), 313-321 (1987)
 MEDLINE 88082760
 PUBMED 3121313

REFERENCE 9 (bases 1 to 1590)
 AUTHORS Rutherford, M.N., Hannigan, G.E. and Williams, B.R.
 TITLE Interferon-induced binding of nuclear factors to promoter
 elements
 of the 2'-5'A synthetase gene
 JOURNAL EMBO J. 7 (3), 751-759 (1988)
 MEDLINE 88283644
 PUBMED 2456211

REFERENCE 10 (bases 1 to 1590)
 AUTHORS Wathélet, M.G., Szpirer, J., Nols, C.B., Clauss, I.M., De
 Wit, L.,
 Islam, M.Q., Levan, G., Horisberger, M.A., Content, J.,
 Szpirer, C. and
 Huez, G.A.
 TITLE Cloning and chromosomal location of human genes inducible
 by type I
 interferon
 JOURNAL Somat. Cell Mol. Genet. 14 (5), 415-426 (1988)
 MEDLINE 89019578
 PUBMED 3175763

REFERENCE 11 (bases 1 to 1590)
 AUTHORS Nechiporuk T, Nechiporuk A, Sahba S, Figueroa K, Shibata
 H, Chen
 XN, Korenberg JR, de Jong P and Pulst SM.
 TITLE A high-resolution PAC and BAC map of the SCA2 region
 JOURNAL Genomics 44 (3), 321-329 (1997)
 MEDLINE 97468145
 PUBMED 9325053

REFERENCE 12 (bases 1 to 1590)

Figure 1:Page 3

AUTHORS Renault B, Hovnanian A, Bryce S, Chang JJ, Lau S,
 Sakuntabhai A,
 Monk S, Carter S, Ross CJ, Pang J, Twells R, Chamberlain
 S, Monaco

AP, Strachan T and Kucherlapati R.
 TITLE A sequence-ready physical map of a region of 12q24.1
 JOURNAL Genomics 45 (2), 271-278 (1997)
 MEDLINE 98008914
 PUBMED 9344649
 REFERENCE 13 (bases 1 to 1590)
 AUTHORS Hovnanian,A., Rebouillat,D., Mattei,M.G., Levy,E.R.,
 Marie,I.,
 Monaco,A.P. and Hovanessian,A.G.
 TITLE The human 2',5'-oligoadenylate synthetase locus is
 composed of three distinct genes clustered on chromosome 12q24.2
 encoding the 100-, 69-, and 40-kDa forms
 JOURNAL Genomics 52 (3), 267-277 (1998)
 MEDLINE 99009311
 PUBMED 9790745
 COMMENT REVIEWED REFSEQ: This record has been curated by NCBI
 staff. The reference sequence was derived from X02875.1.
 Summary: This gene encodes an enzyme included in the 2',
 5'
 oligoadenylate synthase family. This enzyme is induced
 by interferons and catalyzes the 2', 5' oligomers of
 adenosine in order to bind and activate RNase L. This enzyme family
 plays a significant role in the inhibition of cellular protein
 synthesis and viral infection resistance. Alternative splicing of
 this gene produces two isoforms which share identical N-terminal
 sequence but diverge at exon 7.
 Transcript Variant: Transcript variant E18 represents
 the 1.8 kb product that diverges from the predominant transcript
 variant E16 in exon 7. This form contains an additional exon and is
 very hydrophilic as compared to transcript variant E16.
 COMPLETENESS: complete on the 3' end.

FEATURES	Location/Qualifiers
source	1..1590 /organism="Homo sapiens" /db_xref="taxon:9606" /chromosome="12" /map="12q24.1"
gene	1..1590 /gene="OAS1" /note="IFI-4; OIAS"

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        /db_xref="MIM:164350"
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        /note="Isoform E18 is encoded by transcript

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        /db_xref="MIM:164350"
        /product="2',5'-oligoadenylylate synthetase 1,
isoform E18"
        /protein_id="NP_058132.1"
        /db_xref="GI:8051621"



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Figure 1:Page 5

BASE COUNT 425 a 417 c 386 g 362 t
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taccccccagcc
61 aaatctctgg acaagttcat tgaagactat ctcttgccag acacgtgttt
ccgcattgcaa
121 atcgaccatg ccattgacat catctgtggg ttcctgaagg aaagggtgctt
cccgaggtagc
181 tcctaccctg tgtgtgtgtc caaggtggta aagggtggct cctcaggcaa
gggcaccacc
241 ctcagaggcc gatctgacgc tgacactgggt gtcttcctca gtccctctcac
cacttttcag
301 gatcagttaa atcgccgggg agagttcatc caggaaatta ggagacagct
ggaaggcctgt
361 caaagagaga gaggactttc cgtgaagttt gaggtccagg ctccacgctg
gggcaacccc
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gttcgatgtg
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cctgagaagg
901 cagtcacga aaccaggcc tggatccttgc gacccggcgg accctacagg
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gctgaattac
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ggctgaaagc
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atccacccca
1201 caggcagaag aggactggac ctgcaccatc ctctgaatgc cagtgcattt
tgggggaaag
1261 ggctccagtg ttatctggac cagttccttc attttcaggt gggactcttgc
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gagaatgaaa
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gtattatcaa
1561 taacaataaa aataaagcaa ataccaaaaa
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Figure 2: Schematic of the OAS1 gene showing intron/exon structure and protein structure

Genomic structure

